DOCUMENT RESUME

ED 276 991 CS 008 645

AUTHOR Bass, Jo Ann Fisher
TITLE The Effects of the Suggestive-Accelerative Learning and Teaching Method and a Structural Analysis Method on Vocabulary Learning.
PUB DATE 85
NOTE 39p.; Partial funding for this study provided by the Society for Accelerative Learning and Teaching.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS College Freshmen; Comparative Analysis; Educational Research; Higher Education; Language Usage; *Learning Strategies; *Learning Theories; Reading Comprehension; Reading Instruction; Structural Analysis (Linguistics); *Suggestopedia; *Teaching Methods; *Vocabulary Development; *Vocabulary Skills

ABSTRACT

Employed extensively in some Soviet bloc countries to teach a variety of subjects, the Suggestive-Accelerative Learning and Teaching (SALT) method uses a combination of physical and mental relaxation exercises, music, and suggestive principles to increase learning. However, in spite of research showing its effectiveness in teaching reading skills and improving reading performance, the method is not widely used in the United States. A study investigated the SALT method, the more commonly used structural analysis method, and a combination of the two in order to determine their effects on vocabulary learning and student attitudes toward the methods. Subjects were 58 college freshmen, who were taught 390 words and definitions in 13 lessons. The SALT group was taught words and definitions using the SALT components of suggestion, relaxation, music, and imagery, while the structural analysis group was taught words, definitions, and word parts without any of these techniques. The combination group was taught words, definitions, and word parts using all the SALT components. Results showed that each group made significant gains from pretest to posttest. THe SALT group, however, had significantly higher posttest and gain scores than did the structural analysis group. No significant differences were found among the groups on vocabulary not taught in the study and in attitudes toward the methods. A list of 30 references is appended. (FL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED276991

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

The Effects of the Suggestive-Accelerative Learning and Teaching Method and a Structural Analysis Method on Vocabulary Learning

Jo Ann Fisher Bass

Berry College

This study was supported in part by a research award from the Society for Accelerative Learning and Teaching, and it received the Metropolitan Atlanta College Developmental Reading Council's 1986 Research Award.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jo Ann F. Bass

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS 008 645

The Effects of the Suggestive-Accelerative Learning and Teaching Method and a Structural Analysis Method on Vocabulary Learning

The Suggestive-Accelerative Learning and Teaching (SALT) method, the structural analysis method, and a combination of the two methods were investigated to determine their effects on vocabulary learning and attitudes toward the treatments. Fifty-eight college freshmen were taught 390 words and definitions in 13 lessons. The SALT group was taught words and definitions using the SALT components of suggestion, relaxation, music, and imagery. The structural analysis group was taught words, definitions, and 226 word parts without using any SALT components. The combination group was taught words, definitions, and word parts using all SALT components. Each group made significant gains from pretest to posttest on vocabulary taught in the study. On comparisons among groups, the SALT group had significantly higher posttest and gain scores than the structural analysis group. No significant differences were found among the groups on vocabulary not taught in the study and in attitudes toward the treatments.

The Effects of the Suggestive-Accelerative Learning and Teaching Method and a Structural Analysis Method on Vocabulary Learning

Success in college depends largely on students' ability to comprehend the information contained in reading materials. Often, students lack the vocabulary necessary to comprehend their college reading materials. When this lack occurs, teachers are faced with the problem of efficiently teaching a large amount of vocabulary in a short amount of time. Probably the most widely accepted method of teaching vocabulary at the secondary and college level is the structural analysis method in which the meanings of Greek and Latin prefixes, suffixes, and root words are taught and applied to words containing these word parts. There are, however, some accelerated-learning methods used rather extensively in countries in the Soviet Bloc and to a lesser degree in the United States which might prove useful in teaching words to students who need to increase their vocabularies. Bayuk (1983) listed four of these methods which might accelerate learning. Hypnopedia involves the playing of instructional tapes during natural sleep. In rhythmopedia, information is presented during induced sleep or hypnosis.

Suggestopedia, which imparts information to students who are relaxed but awake, includes the giving of suggestions by the teacher. Relaxopedia is similar to suggestopedia, but in relaxopedia, suggestions by the teacher are not used.

Of these four accelerated-learning methods, suggestopedia and relaxopedia could possibly be used in American classrooms, but only suggestopedia has generated even moderate interest in the Western academic world. According to Harris (1981), "suggestopedia is a new development in the application of psychological techniques to education, and one worth watching" (p. 408). Yellin (1983) characterized suggestopedia as a holistic approach and stated, "It is now time for the academic community to examine the potential of these holistic approaches for improving learning in the schools" (p. 38).

Suggestopedia, often referred to as suggestology or the Lozanov method, was developed by a Bulgarian physician and psychotherapist named Georgi Lozanov (Lozanov, 1971/1978). The method was introduced to the West in the early 1970's, and with only fragmentary information, a group of educators in Iowa began to conduct research into the method. Spearheaded by Donald Schuster, a psychology professor at Iowa State

University, the group developed an American version of suggestopedia which they called Suggestive-Accelerative Learning and Teaching (SALT). The method uses a combination of physical and mental relaxation exercises, imagery, music, and suggestive principles to increase learning (Schuster & Gritton, 1985).

The SALT method has been used to teach foreign languages, science, math, statistics, spelling, agriculture, reading, and other subjects. Some studies have been conducted in which the components of the method were manipulated to test the effectiveness of each. In other studies, the method was used in its entirety to determine whether or not learning was enhanced.

In studies involving the total SALT method to teach reading, all but one of the studies found that the use of the method aided in improving reading performance. Using elementary subjects of average ability, Prichard, Schuster, and Gensch (1980) found that students in the SALT experimental group performed significantly better than those in the control group when they were compared on reading comprehension and vocabulary subtests. Prichard and Taylor (1980) reported that over a five-year period of SALT experimentation with remedial readers at the elementary level, students averaged

around four months gain in reading scores for one month of instruction. Schuster and Vincent (1980) found that ninth graders who were termed learning disabled showed a significant improvement in reading test scores from pretest to posttest when the SALT method was used to teach them reading. In a study which dealt with word recognition only, Nelson (1979) found that elementary students with learning and behavioral deficits who were taught new words by the SALT method had significantly higher acquisition and retention scores than the control group which was taught with the traditional approach consisting of presenting the new words on flash cards, pronouncing and spelling the words, and using them in sentences. A word identification study by Hales (1983) in which the subjects were mildly and moderately retarded found that suggestopedic techniques did not significantly affect the number of words identified when compared to the traditional teaching approach.

While most research involving the SALT method for teaching reading skills appears to support the method as an aid in improving reading performance, there is a lack of consistency in the findings reported in studies using the structural analysis method. In early studies, Henmon (1921) and Tate (1938) found that the study of root words tended to increase vocabulary acquisition.

These findings were contradicted by later studies. Otterman (1955) reported that the experimental group taught prefixes and root words made a significant gain over the control group in spelling but not in speed of visual and auditory perception, vocabulary, reading comprehension, or reading speed. Hoisington (1968) concluded that directed vocabulary instruction emphasizing the structural analysis of words can be of benefit in improving reading comprehension and that further study is warranted in vocabulary and spelling since no significant differences were found to exist between the groups used.

In recent years, there has been an interest in teaching Latin as a means of improving vocabulary. Two studies (Bassman & Ironsmith, 1984; Evaluation of the FLES, 1971) found that experimental groups taught Latin made significantly greater gains on standardized vocabulary tests than the control groups. Improvement in the vocabularies of students studying Latin was noted in other studies in the literature (Baca, 1977-78; Masciantonio, 1975; Offenberg, Montalvo & Brown, 1971; Scanlan, 1976).

From the review of related literature, research involving both the SALT method and the structural analysis method was found to be lacking. No controlled

study had been conducted in which the complete SALT method was used to teach vocabulary commonly found in college level reading material. Many studies had sought to evaluate the SALT components using extremely rare English words which had limited utilitarian value. Some studies used a small number of subjects, and some spent a rather short amount of time on the treatments. As for the structural analysis method, some of the studies did not contain statistical analyses of the data. In the Latin studies, word parts were usually taught as a foreign language and not as a part of a reading or English class. The structural analysis method appeared to lack extensive study despite the fact that it is the method often advocated by authors of vocabulary development books and test preparation guides, as well as memory experts.

The primary purpose of this study was to investigate the effects of the SALT method, the structural analysis method, and a combination of the two methods on vocabulary taught in the study and vocabulary not taught in the study. An additional purpose was to evaluate the attitudes of the subjects toward the three treatments to determine which method of instruction met with the most approval.

Based on the review of the literature, it was expected that each group would improve their

vocabularies. It was also expected that the SALT group and the SALT plus structural analysis group would perform better than the structural analysis group on comparisons among the three groups. Specifically, the SALT group and the SALT plus structural analysis group were expected to score higher in measures of vocabulary taught in the study, vocabulary not taught in the study, and attitudes toward the methods. These expectations were based on studies of the SALT components which indicated that all of the components have important functions in the learning process (Padawer, 1977; Stein, Hardy, & Totten, 1982; Whidby, 1974).

The following limitations will have to be considered in an interpretation of the results of this study:

1. Because this study involved a holistic approach with several variables, it is not known which of the variables accounted for any existing differences.

2. Experimenter bias is a possible limitation in this study since the experimenter provided the vocabulary instruction.

3. The results are valid and reliable to the extent that the instruments are valid and reliable.

4. The subjects in this study were volunteers and as such may not be representative of the total population.

5. The results can be generalized only to populations with characteristics similar to those of the subjects used in this study.

6. Contamination of results may have occurred if subjects discussed their treatment with one another.

7. The awareness of students in the structural analysis group that they were the only ones not receiving physical relaxation exercises, mental relaxation activities, and music may be a limiting factor.

Method

Subjects

The sample for this study consisted of 54 volunteers who were enrolled in freshman level English classes and 4 volunteers who were enrolled in a freshman level speech communication class. All 58 subjects were students at a private, two-year college in north Georgia. For participating, the subjects received points on their final grade in English or speech class. Students who had no more than two absences during the study had three points added to their final grade; those absent no more than four times received two points.

All subjects were placed in rank order on the basis of their scores on the vocabulary pretest. They were randomly assigned to groups by alternating from

high-ranked students to low-ranked students until all subjects were placed. The number of subjects in each treatment group ranged from 19 to 20.

Materials

Several materials were developed for this study. These materials were: instructional texts of vocabulary terms, a multiple-choice vocabulary pretest and a multiple-choice vocabulary posttest, physical relaxation exercises, mental relaxation activities, early pleasant learning restimulation activities, practice activities, daily quizzes, and presentations on the relevance of word parts in building vocabulary.

Instructional texts of vocabulary terms.

Instructional sheets for the SALT group contained words and definitions, and sheets for the structural analysis group and the SALT plus structural analysis group contained words, word parts, and definitions. Five lists of word parts were consulted (Brownstein, 1978; Dale, O'Rourke, & Bamman, 1971; Ehrlich, 1968; Katz & Silver, 1981; Monson, 1958), and 226 prefixes, suffixes, and root words which appeared on at least three of the five lists were selected. Thirteen subject matter areas were selected from a university catalog to serve as themes for the lessons. Words that included each of the 226 word parts and were relevant to the subject areas

were selected from books, newspapers, magazines, and other reading material generally available to college students. The word selection process continued until there were 30 words for each subject area, as 30 was determined to be the maximum number of words that could be taught during a sample lesson constructed earlier. Original definitions were written for the 390 words after consulting several dictionaries, and the words and definitions were arranged in a logical order for presentation to students.

Vocabulary pretest and posttest. Using a table of random numbers, 100 words were selected from the 390 words chosen for the study. A 100-item multiple-choice test was constructed which required that the correct definition for a target word be selected from four options. After the entire test was constructed, a flip of a coin determined that odd-numbered items would make up the pretest, and the posttest would consist of the even-numbered items. Scores from these tests were used to assess student performance on vocabulary taught in the study.

Physical relaxation exercises. Four physical relaxation exercises, each lasting about one minute, were written for use at the beginning of the SALT and

the SALT plus structural analysis groups' lessons. These exercises involved the neck and shoulder muscles in tensing and releasing movements designed to ease muscular tension. One of these exercises was used each day (see Figure 1).

Figure 1

The Front Neck Roll

The lesson begins with a physical relaxation exercise. You may remain seated. Both feet should be on the floor, and your hands should be on your lap.

Watch as I demonstrate the front neck roll. (The instructor stands and faces the students.) To begin the exercise, turn your head as far to the right as you can. Then lower your head until your chin touches your shoulder. Now slowly move your head to the left, being careful to keep your chin low. Stop with your chin on your left shoulder. Reverse the movement to make one complete cycle. We will do three cycles.

Ready? Begin. Touch the right shoulder. Roll to the left. Touch the left shoulder. Now roll to the right. Stop on the right

shoulder. Once more. Roll left. Touch the shoulder. Roll back. Touch the right shoulder. Last time. Roll left. Touch shoulder. Roll right. Touch shoulder. Bring your head to its normal upright position and relax.

Mental relaxation activities. Guided imagery activities were written for the SALT and the SALT plus structural analysis groups to help students forget their present problems and focus their attention on what the teacher was saying. Six tape-recorded activities, each approximately three minutes in length, were evaluated for effectiveness by five students who did not participate in the study. The four activities rated as most relaxing were used during the study, and the two lowest-rated activities were eliminated. An example of one of these activities is presented in Figure 2.

Figure 2

The Lake

Continue your physically relaxed feeling by sitting in a comfortable position. Breathe slowly and close your eyes as you visualize a pleasant scene in nature.

Imagine yourself standing on a hillside overlooking a small lake. It is a warm,

spring day. The sky is a clear, blue color. All is calm.

You look around and see yellow daffodils growing along the hillside. Some of the trees have swollen buds on the tips of their twigs, almost ready to open into leaves. The weeping willow trees down near the water already have tiny, yellow-green leaves, giving them a delicate, airy appearance.

As you walk down the hillside toward the lake, you notice the grass has a fresh, green color. You come to the edge of the lake and look out across the still, blue water. The water is like a mirror, reflecting images of the trees on the opposite bank. Looking closely at the surface of the water, you see an occasional ripple in the shape of a circle.

Your eyes catch a glimpse of motion, and you look up just in time to see a pair of ducks land on the bank on the far side of the lake. You watch them as they waddle toward the water. They make a gentle splash as they get into the water and begin swimming in single file. They glide effortlessly and serenely toward the center of the lake. The

ducks make a V-shaped ripple in the water behind them as they swim.

You have a calm and serene feeling. You are refreshed both mentally and physically.

Early pleasant learning restimulation activities. Four activities lasting about one minute each were written for the SALT and the SALT plus structural analysis groups to help students develop a positive feeling toward learning. Students were asked to recall vividly a time when learning was pleasant and then to bring the feelings associated with that pleasant learning experience to the present learning situation. These activities were tape recorded to follow the mental relaxation activities with no interruption, and one was used each day. See Figure 3 for one of these activities.

Figure 3

Easy Learning

During the next part of the lesson, try to maintain your relaxed feeling. I want you to recall a time during your childhood when learning was pleasant and easy. Maybe you got a new model or kit, and it was so easy to assemble that the pieces just seemed to fall

into place. You may remember that playing ball was easy for you to learn.

Recall as much as you can about the experience. Where were you? Who was with you? Look at the way your body was responding to the learning situation. See what was happening to your stomach. Remember the expression you felt was on your face when learning was easy.

Let the feelings you had then become real to you now. Learning new words will be pleasant and easy for you. We're ready to begin the next part of the lesson.

Practice activities. Activities designed for activation and elaboration of the lesson material were written for use with all the groups. These activities included making sentences containing new words, creative writing, and dialogs. One activity was done each day after the words had been presented and reviewed. Figure 4 contains a practice activity for one lesson.

Figure 4

Practice Activity on Agriculture Words

Students are asked to imagine that they are farmers who have had their farms selected for the Spring Tour of Farms. They are to

write what they would say to their visitors from the city as they show them around the farm. They should use as many of the words and definitions that they have studied as possible.

Daily quizzes. A quiz which required students to match the word with its correct definition was prepared for each lesson and used by all groups. The purpose of the quizzes was to provide students with a measure of their progress. Students scored their own papers, and the instructor did not see the papers.

Presentations on the relevance of word parts in building vocabulary. Four presentations on the relevance of word parts in building vocabulary were prepared for use with the structural analysis group, and one was delivered each day to correspond to the time in which the SALT and the SALT plus structural analysis groups received the physical relaxation exercises, mental relaxation activities, and early pleasant learning restimulation activities. These presentations were intended to show the subjects that the structural analysis method was a viable one for improving vocabulary.

Two instruments chosen to measure the dependent variables were not original. One instrument was a form

of the Scholastic Aptitude Test (SAT) used by Educational Testing Service in 1983. It provided a measure of student performance on vocabulary not taught in the study. The two 30-minute verbal sections consisting of antonyms, analogies, sentence completion, and reading comprehension were administered. Another instrument, the Listed Thought Procedure (LTP), measured the attitudes of the students toward the three methods of instruction. In this procedure, the subjects wrote their own thoughts about the method of instruction used with their group, indicated whether each statement was for or against the treatment, and rated the degree to which the statement favored or opposed the treatment. Cullen (1968) compared the LTP with the Thurston and the Likert-type procedures. Test-retest reliabilities of .62 to .66 were reported for the LTP.

Procedure

Each of the three groups met for 15 sessions including pretesting, lessons, and posttesting. The pretesting and teaching sessions were approximately 40 minutes long, and the posttesting session lasted about 90 minutes. The sessions covered a period of eight weeks.

Students in the SALT group received vocabulary instruction using the complete SALT method. The first five minutes of the lesson consisted of a physical relaxation exercise, a mental relaxation activity, and an early pleasant learning restimulation activity. During the next 10 minutes, the instructor used gestures, facial expressions, and varying intonations as she read aloud the 30 vocabulary terms and their definitions. Students were asked to follow along on their instructional sheets and to form images for the words that were interactive, vivid, unusual, and involved as many of the senses as possible. In the next 10-minute segment, a commercial tape (Superlearning Exercises, 1979) of baroque music with 60 beats per minute played in the background. The teacher synchronized the oral reading of the words and definitions with the music. Students were instructed to relax, synchronize their breathing with the music and the reading, and recall the images that they generated during the previous part of the lesson. A practice activity and the daily quiz were completed during the last 15 minutes of each lesson.

Subjects in the structural analysis group were taught using the conventional method of teaching

prefixes, suffixes, and root words and applying the word parts to new words. Relaxation, imagery, suggestion, and music were not used. During the first five minutes of the lesson, students received a presentation on the relevance of word parts in building vocabulary. In the 10-minute segment that followed, the 30 words, word parts, and definitions were presented as students followed along on their instructional sheets. Students were told to notice the way the word parts and definitions were related to the words and their definitions and to use the word parts as keys to remembering the definitions of the words. During the next 10 minutes, the teacher reread the words, word parts, and definitions while the students followed along on their sheets. The last 15 minutes of the lesson consisted of a practice activity and the daily quiz.

The SALT plus structural analysis group was taught using the same procedure as the SALT group with only one difference. During the presentation of words and definitions, word parts contained in each word were introduced.

Instructor evaluation

Since the vocabulary lessons were taught by the researcher, an evaluation was conducted to determine if the researcher's behavior was consistent among the

groups. Five volunteers observed the instruction and indicated the degree to which they thought the researcher exhibited each characteristic in a standard set of six statements. Four of the statements received the same rating by all five evaluators. The statements were: shows enthusiasm, demonstrates sincerity, possesses a sense of purpose, and emphasizes the importance of material. The ratings for the two remaining statements varied by 0.2 of a point. The statements were: exhibits belief in method of instruction and establishes belief that learning will occur. It was concluded that the researcher behaved in a generally consistent manner in all three groups.

Results

The primary purpose of this study was to compare three methods of teaching vocabulary: the SALT method, a structural analysis method, and a combination of the SALT and the structural analysis methods. This purpose was accomplished by analyzing data collected with various instruments. The vocabulary posttest provided a means of comparing students on vocabulary taught in the study. The verbal sections of the SAT provided a means of comparing students on vocabulary not taught in the study, and the LTP provided a means of comparing students on attitudes toward the methods of instruction.

The means and standard deviations of the vocabulary pretest, posttest, and gain scores are presented in Table 1. The means and standard deviations of the SAT raw scores and the LTP are presented in Table 2.

A correlated *t* test was performed for each group's gain in vocabulary scores from pretest to posttest. The SALT group showed a significant gain in vocabulary scores from pretest to posttest, $t(18) = 5.94$, $p = .00005$, one-tailed test. The structural analysis group also showed a significant gain from pretest to posttest, $t(19) = 7.59$, $p = .00005$, one-tailed test. Likewise, the SALT plus structural analysis group made a significant gain from pretest to posttest, $t(18) = 6.90$, $p = .00005$, one-tailed test.

The vocabulary posttest scores were compared among groups. An analysis of covariance (ANCOVA) was computed to control for differences among groups on the vocabulary pretest. This analysis indicated that significant differences existed among the groups, $F(2,54) = 2.35$, $p = .05$, one-tailed test. Table 3 contains a summary of the ANCOVA of vocabulary posttest scores. A post hoc Tukey test was used to determine which posttest means were significantly different. This comparison indicated that the adjusted posttest mean of the SALT group was significantly higher ($p<.05$) than

Table 1

Means and Standard Deviations of Vocabulary Pretest, Posttest, and Gain Scores

		Pretest		Posttest		Gain	
Group	n	M	SD	M	SD	M	SD
1	19	21.58	9.49	35.59	11.38	13.16	9.66
2	20	23.40	9.22	30.85	9.44	8.00	4.71
3	19	23.05	6.15	34.88	8.69	12.11	7.64

Note. Group 1 = SALT

Group 2 = Structural analysis

Group 3 = SALT plus structural analysis

Table 2

Means and Standard Deviations of SAT Raw Scores and Listed Thought Procedure Scores

		SAT		LTP	
Group	n	M	SD	M	SD
1	19	24.21	16.45	1.48	1.36
2	20	26.35	20.63	1.13	1.61
3	19	27.42	17.26	1.34	1.27

Note. Group 1 = SALT

Group 2 = Structural analysis

Group 3 = SALT plus structural analysis

Table 3

Summary of the ANCOVA of Vocabulary Posttest Scores

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Group	255.18	2	127.59	2.35	.05265
Covariate:					
Pretest	2445.69	1	2445.69	44.99	.00005
Error	2935.32	54	54.36		

that of the structural analysis group. There was no significant difference between the SALT group and the SALT plus structural analysis group or between the structural analysis group and the SALT plus structural analysis group.

Gain scores from vocabulary pretest to posttest were calculated for each group, and a one-way analysis of variance (ANOVA) was computed on the scores. This analysis showed that there were significant differences among the three treatment groups, $F(2,55) = 2.54$, $p = .04$, one-tailed test. A summary of the ANOVA is presented in Table 4. The Tukey test, used for post hoc comparison, determined that the mean gain score of the SALT group was significantly higher ($p<.05$) than that of the structural analysis group. No significant difference was found to exist between the SALT group and the SALT plus structural analysis group or between the structural analysis group and the SALT plus structural analysis group.

Total rounded raw scores on the verbal sections of the SAT were used to compare student performance on a test containing vocabulary not taught in the study. A one-way ANOVA produced no significant differences among the treatment groups, $F(2,55) = 0.15$, $p = .43$, one-tailed test.

Table 4

Summary of the One-way ANOVA of Pretest-Posttest Gain Scores among Groups

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Group	291.61	2	145.81	2.54	.044
Error	3154.32	55	57.35		
Total	3445.93	57			

The mean LTP scores were used for comparing the attitudes of students toward the three teaching methods. No significant differences were found among treatment groups when the LTP scores were compared using a one-way ANOVA, $F(2,55) = 0.31$, $p = .37$, one-tailed test.

Discussion

Since each treatment group showed significant gains from pretest to posttest, it is assumed that each method of instruction aided the subjects in learning the vocabulary taught in the study and that each method may have a significantly positive effect in facilitating vocabulary learning. Several factors may have contributed to this result. All groups received instruction which was highly organized and which focused entirely on vocabulary. Each method required a high level of involvement from students in the practice activities and quizzes, and the quizzes provided immediate feedback to the students. Each method used some means of association for helping the students in remembering the definitions. In addition to the methods themselves, the instructor may have contributed to the differences in pretest-posttest scores by communicating a belief that learning would occur with each teaching method. Finally, since the subjects were volunteers, they may have possessed more motivation and interest in

vocabulary development than would have been found in a normal population.

The significant differences in posttest means and gain score means in favor of the SALT group indicate that the SALT method was apparantly superior to the structural analysis and the SALT plus structural analysis methods under the conditions present in the study. The suggestion, relaxation, imagery, and music components of the SALT method and the teaching of definitions only may have contributed to the higher scores obtained by the SALT group. From comments made by the students on the LTP, some students in the structural analysis group felt that the word parts did not aid them in their learning. Some students in the SALT plus structural analysis group commented on the LTP that they felt rushed; others stated that they needed more time for the method to work.

The novelty effect of the SALT method must be considered as a possible reason for the SALT group's higher posttest and gain scores. Students may have been more interested and enthusiastic because the SALT method contained several new components, whereas, students in the structural analysis group may have been bored since some students indicated on the LTP that they had been taught by the method before. The novelty effect is

diminished somewhat upon close examination of the results of the analyses of data. Although the SALT plus structural analysis group received the same novel components as the SALT group, the combination group's posttest and gain scores were not significantly higher than those of the structural analysis group. Therefore, apparently newness alone does not account for all the differences in favor of the SALT group.

While experimenter bias is a possibility in this study, the instructor evaluation conducted as a part of the study revealed that the instructor behaved in a generally consistent manner in all three groups. Only two obvious inconsistent elements were revealed in that evaluation. The 0.2 of a point deficit for the structural analysis group on the phrase, exhibits belief in method of instruction, should have been offset by the structural analysis group's 0.2 of a point gain on the phrase, establishes belief that learning will occur.

From the findings of the verbal sections of the SAT, it can be assumed that short-term vocabulary instruction using any of the methods in this study is likely to have about the same effect on students' verbal scores on the SAT. It appears that none of the methods significantly improved SAT verbal performance. Perhaps the vocabulary taught in this study was too specific and

was not applicable to a general, standardized test of vocabulary such as the SAT.

Since the analysis of data revealed no significant differences among groups in their attitudes toward the methods, this finding suggests that students in the three groups had similar views of the methods. All groups showed slightly favorable attitudes toward the methods. On the LTP, about the same percentage of statements was written by students in each group indicating they felt their vocabularies had improved as a result of the vocabulary study.

Implications for Research

Several implications can be drawn for further research which attempts to increase vocabulary learning. Only three ways of presenting vocabulary were compared in this study. Other methods need to be investigated to determine their effects on vocabulary development.

The present study should be replicated to determine if there are significant differences among these same teaching methods for students of other age groups. Replication in other geographical locations would also be beneficial.

No attempt was made in the present study to determine students' socioeconomic levels, ability levels, or learning styles. It might be worthwhile to

determine the effectiveness of each method with subjects who have been evaluated according to these characteristics.

The complete SALT method was used to teach vocabulary in this study. The SALT components should be studied individually and in various combinations to determine which of the components account for differences which may exist among groups.

Subjects were tested approximately one week after the last vocabulary lesson. It is not known if the methods differ in long-term effects and in applicability to other subjects and classes.

Student attitudes toward the three treatments need more extensive study. The relation between voluntary participation and attitudes was not explored; neither was the issue of boredom and how it affects student performance. Because 30% of the subjects in the structural analysis group commented on the LTP that the method of instruction used by their group was boring, such an investigation appears to be warranted.

Conclusion

The findings of the present study should be encouraging to those interested in vocabulary development. They support the hypothesis that the SALT, structural analysis, and SALT plus structural analysis

methods can have a significantly positive effect in facilitating vocabulary learning. Further, the SALT method emerged as being apparently superior to the structural analysis method and the SALT plus structural analysis method as a way of study. These findings are important because they assure teachers that any of the methods can enhance vocabulary learning. They also suggest a need for the SALT method to be added to the repertoire of methods used in education and for teacher education programs to include SALT in their methods courses.

References

Baca, A. R. (1977-78). An innovative language program in Los Angeles. The Classical Journal, 71, 257-260.

Bassman, M. F., & Ironsmith, M. (1984). An experimental FLES program in Latin. ADFL Bulletin, 16, 39-41.

Bayuk, M. (1983). Socio-cultural environments and suggestopedia. Journal of the Society for Accelerative Learning and Teaching, 8, 31-40.

Brownstein, S. C. (1978). Barron's how to prepare for college entrance examinations (9th ed.). Woodbury, NY: Barron's Educational Series.

Cullen, D. M. (1968). Attitude measurement by cognitive sampling. Dissertation Abstracts International, 29, 1597A.

Dale, E., O'Rourke, J., & Bamman, H. A. (1971). Techniques of teaching vocabulary. Menlo Park, CA: Benjamin/Cummings.

Ehrlich, I. L. (1968). Instant vocabulary. New York: Pocket Books.

Evaluation of the FLES Latin program in the Washington, DC public schools, 1970-1971. (1971). Washington, DC: Public Schools of the District of Columbia. (ERIC Document Reproduction Service No. ED 060 695)

Hales, V. E. (1983). Suggestopedia: Its effects on word identification skills of mildly and moderately

retarded children. Dissertation Abstracts International, 44, 1053A.

Harris, A. J. (1981). What is new in remedial reading? The Reading Teacher, 34, 405-410.

Henmon, V. A. C. (1921). An experimental study of the value of word study. Journal of Educational Psychology, 12, 98-102.

Hoisington, A. L. (1968). An experimental investigation of a linguistic approach to vocabulary development which emphasizes structural analysis: prefixes, suffixes and root words. Dissertation Abstracts International, 29, 3041A.

Katz, I. W., & Silver, M. L. (1981). How to prepare for the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test. New York: Harcourt Brace Jovanovich.

Lozanov, G. (1978). Suggestology and outlines of suggestopedy (M. Hall-Pozharlieva & K. Pashmakova, Trans.). New York: Gordon and Breach. (Original work published 1971)

Masciantonio, R. (1975). In the schools. The Classical World, 68, 444.

Monson, S. C. (1958). Word building. New York: Macmillan.

Nelson, W. (1979). Experimentation with the Lozanov method in teaching word retention to children with

learning disabilities. Journal of Suggestive-Accelerative Learning and Teaching, 4, 228-271.

Offenberg, R. M., Montalvo, D., & Brown, E. K. (1971). Evaluation of the elementary school (FLES) Latin program 1970-71. Philadelphia: School District of Philadelphia. (ERIC Document Reproduction Service No. ED 056 612)

Otterman, L. M. (1955). The value of teaching prefixes and word-roots. Journal of Educational Research, 48, 611-616.

Padawer, D. D. (1977). Reading performance of relaxation trained children. Dissertation Abstracts International, 38, 1306A.

Prichard, A., Schuster, D. H., & Gensch, J. (1980). Applying SALT to fifth grade reading instruction. Journal of Suggestive-Accelerative Learning and Teaching, 5, 52-58.

Prichard, A., & Taylor, J. (1980). SALT applied to remedial reading: A critical evaluation. Journal of Suggestive-Accelerative Learning and Teaching, 5, 74-80.

Scanlan, R. T. (1976). A computer-assisted instruction course in vocabulary building through Latin and Greek roots. Foreign Language Annals, 9, 579-583.

Schuster, D. H., & Gritton, C. (1985). Suggestive-accelerative learning techniques: Theory and applications. Ames, IA: Author.

Schuster, D. H., & Vincent, L. (1980). Teaching math and reading with suggestion and music. Academic Therapy, 16, 69-72.

Stein, B. L., Hardy, C. A., & Totten, H. L. (1982). The use of music and imagery to enhance and accelerate information retention. Journal of the Society for Accelerative Learning and Teaching, 7, 341-356.

Superlearning Exercise and Music Cassette. (1979). (Cassette Recording No. 101). New York: Superlearning, Inc.

Tate, H. L. (1938). Two experiments in reading-vocabulary building. Modern Language Journal, 23, 214-218.

Whidby, N. L. (1974). Waking suggestion: A method to improve reading in elementary education. Dissertation Abstracts International, 35, 1516A-1517A.

Yellin, D. (1983). Left brain, right brain, super brain: The holistic model. Reading World, 23, 36-44.